
2014 DELAWARE RESIDENTS' OPINIONS OF CLIMATE CHANGE AND SEA LEVEL RISE SURVEY

A BRIEF SUMMARY BY THE DELAWARE COASTAL PROGRAMS

INTRODUCTION

Attitudes, perceptions and knowledge about climate change and sea level rise are rapidly evolving. Climate change stories are in the headlines almost daily, politicians are increasingly discussing the need to act and weather events like Hurricane Sandy have brought the potential impacts of climate change home to many on the East Coast. Given this changing landscape, it is important for decision-makers, educators and others to have locally based and up-to-date information about public attitudes and perceptions about climate change so that plans, projects and outreach materials can be specific and tailored for Delaware.

Recognizing the need to understand the public's attitudes about climate change, the Delaware Department of Natural Resources and Environmental Control's (DNREC) Delaware Coastal Programs contracted with Responsive Management, Inc. in 2009 to conduct a baseline survey and analysis. This baseline survey was conducted using phone interviews of 1,505 Delaware residents and asked a series of questions to test the respondents' general knowledge of climate change and sea level rise, general knowledge of potential impacts and support for action. The results of the 2009 survey have been used by DNREC and its partners inform outreach and messaging strategies and to inform policy development. The survey is available online:

<http://www.dnrec.delaware.gov/coastal/Pages/CCSLRSurvey.aspx>.

Since 2009, the DNREC Delaware Coastal Programs, DNREC Division of Climate and Energy, and the Delaware Sea Grant College Program, and numerous partners have focused significant effort and resources to develop climate change and sea level rise policies in the state and to increase awareness of the importance of proactively preparing for the impacts of climate change and sea level rise. At the time of the 2009 survey, the DNREC Delaware Programs envisioned repeating the survey in five years to determine how public perceptions on the climate change and sea level rise were evolving.

The 2014 *Delaware Residents' Opinions of Climate Change and Sea Level Rise* survey was conducted by Responsive Management, Inc. with funding and technical assistance from the DNREC Delaware Coastal Programs, DNREC Division of Energy and Climate and Delaware Sea Grant. The 2014 survey utilized the same methodology as the 2009 survey and was based upon the same set of questions. Funding limitations and increased understanding of public perceptions of climate change resulted in the elimination, addition and modification of several questions; however the majority of questions asked in the 2014 survey were identical to the 2009 survey. 1,508 residents were surveyed by telephone (cell phones were included); a sample size representative enough to allow results to be reported at a 95% confidence interval.

This summary of the 2014 *Delaware Residents' Opinions of Climate Change and Sea Level Rise* highlights the methods and major findings of the 2014 survey. Overall, the 2014 survey indicates that Delaware residents have become slightly more supportive of, or agreeable to, the concepts and actions related to climate change and sea

level rise. Survey respondents in 2014 were also slightly more likely to consider climate change and sea level rise threats, but concern for both did not increase substantially.

The 2014 survey showed that there remains strong agreement that we should take immediate action to reduce the impacts of climate change and sea level rise. It is also worth noting that many of the increases and decreases that were seen in the comparisons between the 2009 and 2014 surveys show shifts into response categories of “strongly” or “very” which may be an indication that in the past five years, those who were only marginally convinced or concerned about climate change and sea level rise have become increasingly concerned. There were also some small, yet encouraging, decreases in responses that suggest denial or misunderstanding of climate change and sea level rise.

METHODOLOGY

The 2014 survey of Delaware residents’ opinions on climate change and sea level rise entailed a telephone survey of 1,508 Delaware residents. Both landlines and cellphones were included. The telephone survey questionnaire was developed cooperatively by Responsive Management, Inc., DNREC Delaware Coastal Programs, DNREC Division of Climate and Energy and Delaware Sea Grant and was based on a similar survey administered for Delaware Coastal Programs in 2009. Responsive Management, Inc. conducted pre-tests of the questionnaire to ensure proper wording, flow, and logic of the survey questions. The sample was stratified in two ways: by county, with a goal of 500 completed interviews per county, and by cell phone/landline, with these being sampled proportionally in each county. The survey results were weighted by demographic and geographic characteristics in each county and then by county population, providing statewide results representative of all Delaware residents. Cross-tabulations were run on many questions by county of residence and by coastal/non-coastal residency. Additionally, trends based on the 2009 survey are included for those questions where a statistically significant change was identified. The findings of the survey are reported at a 95% confidence interval.

RESULTS

PERCEPTIONS OF IMPORTANT ENVIRONMENTAL ISSUES

When compared with other issues of national importance (economy, crime and education), climate change and sea level rise rank at the bottom of the list. In 2014, over 90% of all respondents were “very” or “somewhat” concerned about crime, the environment, education, health care and the economy. 78% were “very” or “somewhat” concerned about climate change; 66% for sea level rise. Less than a majority were “very” concerned about climate change and sea level rise. These results are similar to the 2009 survey, although the percentage of respondents who are “very” concerned about climate change increased over this time period (the same trend did not exist for sea level rise). The cross-tabulations indicated that those who are very concerned about climate as a national issue are more likely to have a bachelor’s degree, live in a coastal area, or know a great deal about the subject. Women and young people (less than 48 years old) were also more likely to be very concerned about climate change as a national issue.

The survey also presented a list of nine possible environmental concerns and asked residents to rate their concern. Even among the environmental issues, respondents ranked climate change and sea level rise low. Over 80% of respondents were “very” or “somewhat” concerned about the loss of wetlands, forest habitat, air quality, toxic waste and water pollution. This compares to less than half being very concerned about climate change and only about a third being very concerned about sea level rise. However since the 2009 survey, residents have grown increasingly concerned about climate change, with opinions moving from just being “somewhat” concerned to “very” concerned by 14%.

KNOWLEDGE AND AWARENESS OF CLIMATE CHANGE AND SEA LEVEL RISE

More than half of Delaware residents say that they know either a “great deal” or a “moderate amount” about climate change. However, less than a third claim to know “a little”, and only a small percentage say that they know nothing. The level of knowledge about climate change has slightly decreased since 2009. Residents previously reporting knowing a “great deal” or a “moderate amount” about climate change slightly decreased, while residents knowing only a “little” about climate change slightly increased. There could be many explanations for this change; one might be that as residents become more aware of the issue, they may realize there is much more to learn about it, and hence they acknowledge that their awareness of it is not at a high level.

In 2014, less than half (41%) of residents said that they know a great deal or moderate amount about sea level rise while more than half of residents (58%) say that they know “a little” or “nothing”. This level of knowledge has not changed since 2009.

Half of residents correctly said that most scientists think that climate change is happening. However there is a substantial perception in Delaware that there is disagreement among scientists about whether or not they think climate change is happening. About a third of residents say there is a lot of disagreement among scientists about whether climate change is happening or not, and 17% say they don’t know enough about this matter to say. However, there is an encouraging trend in this perception. Since 2009, residents have increasingly agreed that most scientists think that climate change is happening. In 2009, 42% reported that scientists think climate change is happening; in 2014 the percentage grew to 49%. In addition, respondents who believed there is scientific disagreement about climate change decreased by 11% between 2009 and 2014. There was also a slight increase in the number of residents that responded they didn’t feel like they know enough to say on this question indicating a trend in residents shifting their opinion from believing there is disagreement between scientists to uncertainty about what scientist agree upon.

Delawareans mostly agree that human activity is a cause behind climate change. 41% think climate change is caused mostly by human activity, while 29% think that it is caused about equally by human activities and natural changes. About a quarter of Delawareans think it is only due to natural changes in the environment. Delaware’s opinions and perceptions about the causes of climate change have not changed significantly since 2009.

OPINION ON CLIMATE CHANGE AND SEA LEVEL RISE AND WHETHER THEY ARE HAPPENING

79% of Delawareans are completely or mostly convinced that climate change is happening. There is an increasing trend in those convinced climate change is happening since 2009 with 8% more residents reporting that they are convinced that climate change is happening in 2014 than in 2009.

70% of Delawareans are completely or mostly convinced that sea level rise is happening. There is also an increasing

trend in those convinced that sea levels are rising since 2009 with 9% more residents reporting that they are completely convinced that sea level rise is happening in 2014 than in 2009.

A slight majority agree that they have “personally experienced or observed local impacts of climate change” (53%), but 40% disagree. In addition, 28% agree that they have “personally experienced the impacts of sea level rise” but the majority, 66%, disagreed with this statement.

PERCEPTIONS OF CLIMATE CHANGE AND SEA LEVEL RISE AS A THREAT

About four-fifths of Delaware residents (79%) say that climate change is a threat. However, 19% are complacent about climate change, saying that the threat of climate change is not very serious or not at all serious. In the past five years the percentage of Delaware residents who think climate change is a threat has been increasing, and those who think climate change is a very serious threat increased by 7%.

About two-thirds of Delaware residents (68%) are worried about sea level rise. The percentage of respondent who reported that they personally worry about sea level rise has increased since 2009 - 5% more residents reported that they worried a great deal or a moderate amount about sea level rise in 2014.

41% of Delawareans think that climate change is having impacts on their area now. A third of respondents reported that they believe climate change will have an impact in 25 years or less, and 18% say impacts won't occur for 50 years, 100 years, or never (i.e., climate change is not happening).

20% of Delawareans think that sea level is having impacts on their area now. This percentage has increased by 6% since 2009.

PERCEPTIONS OF EFFICACY OF TAKING ACTION TO MITIGATE CLIMATE CHANGE & PERSONAL ACTIONS TAKEN RELATED TO CLIMATE CHANGE AND SEA LEVEL RISE

A majority of Delaware residents (72%) agree that the impacts of climate change can be reduced by human efforts. On the other hand, 21% disagree with this statement.

59% of Delawareans agree that sea level rise can be reduced by human efforts, while 29% disagree.

Similarly, 65% agree that they can personally take actions that will help reduce climate change, while 28% disagree. 70% agree that there are *many* actions that can be taken to reduce climate change.

MANAGEMENT STRATEGIES PERTAINING TO CLIMATE CHANGE AND SENSE OF URGENCY AND RESPONSIBILITY FOR TAKING ACTION

Two questions looked at whether action should be taken now to combat climate change or whether more study should be done. A large majority of Delaware residents (76%) agree that we should take immediate action to reduce the impacts of climate change. This compares to 63% who also agree that we should conduct more research before taking any action to address climate change.

A similar pairing of questions asked the same thing about sea level rise. A large majority of Delaware residents (72%) agree that we should take immediate action to reduce the impacts of sea level rise, while 21% disagree. Meanwhile, 64% agree that we should conduct more research before taking any action to address sea level rise,

and 30% disagree.

These results may show that residents are cautious enough to want additional research on these issues, but the majority also agree that action needs to start taking place, even without of complete knowledge of climate and sea level rise impacts in Delaware.

Regardless of their opinions on climate change and sea level rise, the large majority of residents say that action should be taken to address or reduce the impacts of sea level rise in their area before impacts occur (74% say this) rather than as impacts begin or after impacts cause problems.

The majority of Delawareans support precautionary changes to planning practices to address sea level rise. 63% of Delawareans support changing building codes and regulations to reduce risk in flood prone areas and 62% of Delawareans support avoiding building new structures in areas at risk from sea level rise.

Delaware residents also support increasing funding for research (50%), elevating buildings in areas a risk using private funding (41%), allowing beaches and wetlands to naturally migrate inland (41%), building dikes, seawalls and bulkheads to keep water back, and elevating land surfaces in areas of risk (38%). There was less support for purchasing or acquiring land and open space at risk from sea level rise from willing land sellers (29%) and purchasing or buying-out frequently flooded properties (24%).

SOURCES OF INFORMATION ABOUT CLIMATE CHANGE AND SEA LEVEL RISE

Delawareans are, for the most part, tuned into issues regarding sea level rise. The 2014 survey indicated that in the past year, a majority of Delawareans (53%) have read a newspaper or magazine article about sea level rise, and slightly less than half (45%) have had a conversation with a family member or friend about sea level rise. About a quarter of survey respondents reported having read about sea level rise on social media (29%) or having visited a website about it (24%).

In 2009, 10% of respondents indicated that they would be very likely to attend a meeting or webinar about sea level rise; in 2014 7% of respondents had actually attended a public meeting or workshop on sea level rise. Only a quarter of Delaware residents (25%) have not had any contact or outreach regarding sea level rise (have not had a conversation, read an article, read about it on the internet, read a brochure, or attended a public meeting about sea level rise).

Similar to the 2009 survey, when asked about where they get information about environmental issues in Delaware, survey respondents overwhelmingly identified television (47%), followed by the newspaper (44%) and internet (42%). A noticeable difference between 2009 and 2014 is that the percentage of people reporting that they obtained most of their environmental information from the newspaper dropped from 52% to 44%.

Overwhelmingly, Delawareans are not accessing state and not-for-profit organizations for their environmental information. Only 8% reported that they get most of their environmental information from the DNREC website, 5% from their social media sites and less than 5% from publications and brochures.

FOR MORE INFORMATION

A public release of the 2014 *Delaware Residents' Opinions on Climate Change and Sea Level Rise* document is planned for February, 2015. At that time, the document will be available on the Delaware Coastal Programs and Delaware Sea Grant websites.

For more information or to obtain a copy of the 2014 survey prior to the public release, please contact:

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